REMARKS

Claims 1-10, 13-15, 17-23, 26-31, 40-45, 47-55, 58-63, 66, 67, 69, 75 and 76 are now pending in the application. The Office Action states that Claims 5, 6, 7/6, 27-31, 69/27 and 76/30 are allowed. In the telephone interviews on September 15 and October 13, the Examiner stated that Claim 19, 75/19, and 21 would be allowable if amended to overcome 35 U.S.C. 101 and 112, second paragraph Rejections. Likewise, the Office Action states that Claim 20 would be allowable if amended to overcome 35 U.S.C. 112, second paragraph rejections.

Applicant would like to thank the Examiner for the courtesies extended to applicant's representative during a telephone interview on October 13, 2009. During the interview, the Examiner clarified his interpretation of the applied references in relation to select claims. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

CLAIM OBJECTIONS

Claim 43 stands objected to for certain informalities. Applicant has amended this claim. In particular, the recitation of the converting sections of Claim 43 has been amended based on, for example, the recitations on page 28, lines 11-13 and page 76, lines 15-19 of the specification. Therefore, reconsideration and withdrawal of this objection are respectfully requested.

REJECTION UNDER 35 U.S.C. § 101

Claims 19, 21 and 75/19 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Claim 64 also stands rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. These rejections are respectfully traversed.

Claim 19 has been amended in a manner similar to other pending claims. Claim 64 has been cancelled, thereby rendering the rejection moot. Therefore, reconsideration and withdrawal of this objection are respectfully requested.

REJECTION UNDER 35 U.S.C. § 112

Claims 19, 20, 21, 22/20 and 75 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is respectfully traversed.

The former instance of "a section" pointed out by the Examiner is different from the latter instance of "a section" pointed out by the Examiner. Specifically, the former instance is converting sections which respectively correspond to a plurality of the signal format type which are used in a user's device. That is, these converting sections are a part of the plurality of converting sections recited in the second paragraph of Claims 19 and 20. On the other hand, the latter instance is a single converting section which corresponds to an IP address contained in a calling connection request from the user's device. That is, this converting section is one of converting sections which respectively correspond to a plurality of IP addresses. Thus, Claims 19 and 20 have been amended

so as to further clarify the foregoing points. Applicant believes that all pending claims particularly point out and distinctly claim the subject matter of the present invention. Therefore, reconsideration and withdrawal of this rejection is respectfully requested.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 4, 7/2, 7/4, 8, 9, 10, 69/2 AND 75/1 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 1229692 in view of Morinaga et al (U.S. Pat. No. 6,785,263) and Oguchi et al. (Pub No.: US 2002/0067725 A1).

Independent Claims 1 and 2

Claims 1 and 2 have been amended so as to incorporate the limitation recited in dependent Claim 7 (i.e., registering a port identifier for a user's own device or an interface identifier which corresponds to at least a first signal format which is used in the user's device). Claim 7 has been amended so as not to refer to Claim 2. Claims 1 and 2 have also been amended based on FIG. 4 so as to recite that not only the port identifier for the user's own device but also a port identifier for an OVPN terminating device are registered in the registering section.

In accordance with the limitations incorporated into Claims 1 and 2, since the port identifiers for the user's own device and the OVPN terminating device or the interface identifier are registered so as to correspond to at least a first signal format used in the user's device, it is possible to efficiently perform path (route) switching in the OVPN terminating device (e.g., the switching by the optical switch 32 shown in FIG 2) using

the port identifiers or the interface identifier corresponding to the first signal format type retrieved by the retrieving section.

In contrast Oguchi does not disclose or suggest the foregoing limitations incorporated into Claims 1 and 2, and the above-described advantageous effect cannot be obtained from Oguchi. For example, the Examiner points out paragraphs [0045] and [0202] of Oguchi with respect to the limitation recited in Claim 7 (page 12 of the Office Action). However, these paragraphs merely recite that the VPN-ID and the virtual router of the VPN to which a user network belongs are identified by referring to a user accommodating interface-virtual router correspondence table (FIG. 16) using the port number of a port that has received a packet from the user network, and the received packet is passed to the identified virtual router.

Oguchi does not identify the port number based on the signal format used in a user router (e.g., reference symbol UR2 shown in FIG. 1). Rather, Oguchi merely identifies the virtual router to which the packet received by an edge router (e.g. reference symbol PR1 shown in FIG. 1) is passed based on the port number. Therefore, it is respectfully submitted that these claims define over the relied upon references.

Independent Claims 3 and 4

With respect to the Examiner's assertion in the telephone interview on October 13 that it is unclear whether each of the recited sections belong to the OVPN (terminating) device or the other OVPN (terminating) device, Claims 3 and 4 have been amended so as to recite the selecting section as a function/means of the OVPN

terminating device itself rather than a function/means of the other OVPN terminating device, based on, for example, page 51, last paragraph to page 52, first paragraph of the specification and FIG 7.

With respect to the Examiner's assertion in the telephone interview on October 13 that support in the specification for the "receiving and selecting section" should be identified, support for this section can be found, for example, in the second embodiment of the present application. Specifically, please refer to the phrase "By doing this, the OVPN terminating device 30 receives the first signal format type information which is used in the device which receives the calling connection request from the other OVPN terminating device 80 so as to respond to the notification and selects the first signal format type which is used by the user's device 20-1 based on the signal type information" as recited on page 52, second paragraph of the specification.

With respect to the Examiner's assertion in the telephone interview on October 13 that Morinaga teaches devices that exchange transmission parameters and each OVPN device could use the process taught in Morinaga to exchange parameters, including signal format type, applicant believes that there are no grounds that Morinaga discloses the technical idea of exchanging transmission parameters. For example, Morinaga merely discloses that when the calling side performs transmission, the calling side refers to the contents of table 3 and sets the transmission format to be used (e.g., column 9, line 40 to column 10, line 13 and FIG. 3 of Morinaga). Morinaga fails to mention that the contents registered in table 3 are exchanged by notifying the destination side (the incoming side) of the registered contents of table 3.

In contrast, in Claims 3 and 4, the (calling side) OVPN terminating device notifies the registered contents to another OVPN terminating device. The other OVPN terminating device refers to the registered contents, selects the first signal format which is used by a destination (i.e., a user's device accommodated by the other OVPN terminating device) of a calling connection request, and transmits the first signal format type information used by the destination to the calling side OVPN terminating device as a response to the notification. The calling side OVPN terminating device selects the first signal format type based on the transmitted first signal format type information. Such distinctive features are neither disclosed nor suggested by Morinaga. Therefore, it is respectfully submitted that these claims define over the relied upon references. If the Examiner still considers that these distinctive features are disclosed or suggested by Morinaga, the Examiner should specifically point out the recitations of Morinaga.

Independent Claim 9

The Examiner newly provides assertions as recited on page 13, line 7 to page 14, line 2, and page 14, line 3 from the bottom to page 15, line 9 of the Office Action. However, these assertions are similar to those with respect to Claims 1 and 2, which do not include the limitation of Claim 9 added by the response to the previous Office Action (i.e., the converting sections are commonly used by a plurality of OVPN terminating devices which are not provided with converting sections). The Examiner's new assertions do not explicitly indicate which portion of '692 reference or Oguchi teaches the added limitation of Claim 9.

In the Examiner's assertion in the telephone interview on September 15 (i.e., "the limitation you added ... using the converting section"), the Examiner did not explicitly indicate which structural element in '692 reference corresponds to users (terminals) asserted by the Examiner.

Referring to '692 reference, since an ODU 94 is input to an optical transport network node N1 as shown in FIG. 2, the node N1 is not a user (a client in '692 reference). Thus, '692 reference does not specifically depict users, and the users are disposed upstream of the node N1 and downstream of an optical transport network node N2 (FIG. 1).

In the telephone interview, the Examiner also pointed out paragraph 19 of '692 reference. This paragraph states that optical transport nodes may be disposed upstream of the node N1 and downstream of the node N2, respectively. However, this merely means that a plurality of optical transport nodes may be sequentially disposed between a user and a terminating node SNA and between a user and a terminating node SNB.

In view of the Examiner's assertions, it appears that the Examiner associates a user of '692 reference with the OVPN terminating device of Claim 9, which is not provided with converting sections, and associates the node N1 of '692 reference with the collective converting device of claim 9, which is provided with converting sections. However, '692 reference does not state that a plurality of users are connected to the node N1. Moreover, the users of '692 reference do not perform a terminating process. Rather, the structural elements in '692 reference that performs a terminating process are nodes SNA and SNB shown, for example, in FIG. 1 (more specifically, see

paragraph [0038] and the termination equipment 64 provided in the node SNB shown in FIG 6 of '692 reference). Therefore, the users of '692 reference do not correspond to the claimed OVPN terminating device.

In order to exclude the interpretation that the user of '692 reference corresponds to the claimed OVPN terminating device, Claim 9 has been amended so as to explicitly recite that the OVPN terminating devices accommodate user's devices as disclosed, for example, in FIG. 10 (the fifth embodiment of the present application). If the user of '692 reference corresponded to the claimed OVPN terminating device, this results in a contradiction that a user accommodates a user.

Notwithstanding this claim amendment, the Examiner may assert that the node N1 or N2 of '692 reference corresponds to the claimed OVPN terminating device and the node SNA or SNB of '692 reference corresponds to the claimed collective converting section. However, in '692 reference, only the node N1 is connected to the node SNA, and '692 reference fails to disclose or suggest that a plurality of nodes similar to the node N1 are connected to the node SNA. Moreover, the nodes N1 and N2 of '692 reference perform format conversion (i.e. conversion from an ODUk 94 into an OTUk 96 as shown in FIG 2). Therefore, the nodes N1 and N2 of '692 reference are different from the claimed OVPN terminating device, which is not provided with converting sections. In addition, as explained above, the nodes N1 and N2 of '692 reference do not perform a terminating process, and thus these nodes do not correspond to the claimed OVPN terminating device.

In order to further distinguish Claim 9 from the cited references, Claim 9 has also been amended based on, for example, the recitation on page 54, second paragraph of

the specification. Claim 10 has been amended so as to conform to the amendment of Claim 9. None of the cited references disclose or suggest the limitations incorporated into Claim 9 (i.e., each OVPN terminating device selects the collective converting device which is disposed nearest thereto from among a plurality of collective converting devices). Therefore, it is respectfully submitted that these claims define over the relied upon references.

Independent Claim 13

Claims 13, 22/13, 23 and 69/13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the '692 reference in view of Newell, Jr. et al. (Patent No.: US 6,668,319) and French et al (Pub. No.: 2003/0041167 A1).

In the telephone interview on October 13, the Examiner pointed out column 14, lines 47-63 of Newell with respect to the limitation recited in the last paragraph of claim 13. Column 14, lines 47-63 of Newell disclose that if a device 12 does not support a feature 18 requested by a request 22, a match 32 searches for match entries 38 to identify another device 12 that support the requested feature 18, and generates a message which is addressed to a function unit 20 and is used for identifying the other device 12 so that the function unit 20 can generate a request to the other device 12.

However, in accordance with the invention as recited in Claim 13, if no alternate converting section corresponding to a first signal format type exists, information on another first signal format type corresponding to a vacant converting section is notified.

In contrast, in Newell, if a given device does not support the requested feature, another device that supports the requested feature is searched for, and information for

identifying the other device is notified. In other words, assuming that the "feature" of Newell corresponded to the "type" recited in Claim 13, in Newell, if a given device does not support a first signal format type, another device that supports the first signal format type is searched for, and information for identifying the other device is notified.

Furthermore, in Claim 13, the signal format type is not restricted to a particular type. Therefore, so long as a vacant converting section exists, alternate conversion can be realized using another signal format type supported by the vacant converting section.

In contrast, in Newell, the only available feature is the requested feature. Therefore, if no devices support the requested feature, it is impossible to perform operations based on the requested feature even if there are vacant devices. Accordingly, Claim 13 can efficiently utilize vacant resources as compared to Newell.

In order to further distinguish Claim 13 from the cited references, Claim 13 has been amended based on the sixth embodiment of the present application (see, for example, page 57, second paragraph, and FIG. 13). None of the cited references disclose or suggest the limitations incorporated into Claim 13 (i.e., if a user's device can change the first signal format type to another first signal format type corresponding to a vacant converting section, the registration is performed for the other first signal format type, and if the user's device cannot change the first signal format type to the other first signal format type, the registration is performed for the first signal format type after a certain period of time). For this additional reason, it is respectfully submitted that these claims define over the relied upon references.

Independent Claim 43

Claims 43 and 47 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the '692 reference in view of Oguchi. This rejection is respectfully traversed.

With respect to the claimed limitation that "the converting sections are commonly used by a plurality of optical cross connecting devices", the Examiner points out paragraph [0053] of '692 reference (page 32, last paragraph of the Office Action). Please note that since the Examiner points out "page 15, lines 5-7" of '692 reference and cites the recitation of paragraph [0051] of '692 reference ("i.e., "internetworking [sic] that is compatible with the deployment... deployed simultaneously"), applicant believes that paragraph [0053] of '692 reference should read paragraph [0051] of '692 reference.

However, paragraph [0051] of '692 reference merely mentions an optical transport network overlay network where both optical transport network line systems and cross-connects (including add drop multiplexers ADMs) are deployed simultaneously. This paragraph neither discloses nor suggests an apparatus that performs alternate conversion operations of signal formats or the technical idea that such an apparatus is commonly used by a plurality of cross connects. Therefore, '692 reference neither discloses nor suggests the foregoing limitation of Claim 43.

In order to further distinguish Claim 43 from the cited references, Claim 43 has been amended based on, for example, the recitation on page 74, lines 22-24 of the specification. Please note that although page 74, line 24 recites the phrase "OVPN terminating device", this should read the phrase "optical cross connecting device" as can be understood from, for example, FIG. 38 and the recitation on page 73, lines 2-3 of the specification ("the OVPN terminating device is not disposed in the twenty-first

embodiment"). Claims 44, 45, and 47 have been amended so as to conform to the amendment of Claim 43. None of the cited references disclose or suggest the limitations incorporated into Claim 43 (i.e., each optical cross connecting device selects the collective converting device which is disposed nearest thereto from among a plurality of collective converting devices). For this additional reason, it is respectfully submitted that these claims define over the relied upon references.

Independent Claim 49

Claims 18, 21, 49, 50, 52, 53, 54, 69/49, 76/18 and 76/53 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the '692 reference in view of Morinaga and French. This rejection is respectfully traversed.

In the telephone interview on October 13, the Examiner asserts that Morinaga can perform the claimed functions. However, even referring to the disclosure of Morinaga, one of the features of Claim 49 (i.e., receiving a notice that a user's device is connected to a base point device which is disposed between the user's device and an OVPN terminating device from the base point device, and transmitting an IP address and a VPNID allocated to the user's device to the base point device) is neither disclosed nor suggested by Morinaga. Moreover, the advantageous effect of Claim 49 (i.e., it is sufficient to newly allocate the IP address and the VPNID at the time the user's device is connected to the base point device, and thus it is possible to efficiently utilize IP address resources and VPNID resources) cannot be obtained from Morinaga.

Although the Examiner does not point out specific portions of Morinaga, if the Examiner still considers that Morinaga discloses the foregoing feature and

advantageous effect of Claim 49, the Examiner should specifically point out the recitations of Morinaga. Therefore, it is respectfully submitted that these claims define over the relied upon references.

Independent Claim 58

In the telephone interview on October 13, the Examiner provides assertions similar to those with respect to Claim 49, except that the Examiner's assertions rely upon Miyabe rather than Morinaga.

The base point device according to Claim 58 not only multiplies (multiplexes) and separates optical wavelength signals used by user's devices but also notifies the OVPN of information of wavelengths used by the user's device and information that the wavelengths are transmitted under a multiplied (multiplexed) condition. With this feature, it is possible to separate the wavelengths efficiently in the OVPN by utilizing the notified information.

In contrast, Miyabe merely discloses that a reserved label (or a reserved wavelength) is notified by communicating a label request message (or a wavelength request message) and a label mapping message (or a label notification message, or a wavelength notification message) between label switch routers LSR (or between packet switches, or between optical cross-connects). The label switch routers, the packet switches, and the optical cross-connects are clearly different from user's device, and thus Miyabe does not notify information on wavelengths used by a user's device. In addition, Miyabe neither discloses nor suggests the technical idea of notifying information indicating that multiplexed wavelengths are transmitted. For this reason, it

is respectfully submitted that these claims define over the relied upon references. Although the Examiner does not point out specific portions of Miyabe, if the Examiner still considers that Miyabe discloses the foregoing feature and advantageous effect of Claim 58, the Examiner should specifically point out the recitations of Miyabe.

Independent Claim 60

Claims 60-63, 66/61 and 63/63 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the '692 reference in view of Miyabe Miller et al. (Patent No. 6,212,568) and Oguchi. This rejection is respectfully traversed.

In the telephone interview on October 13, the Examiner asserts that the super frame is transmitted as multiple frames in a parallel manner. However, for example, column 9, lines 35-36 of Miller recite that "[s]uch sequential related data frames 68 in essence comprise a single super frame". Moreover, as shown in FIG. 11 of Miller, the super frame is a series of data frames which are sequentially transmitted in the time domain. Therefore, contrary to the Examiner's assertion, the super frame of Miller is not transmitted in parallel. Moreover, the flag of Miller (i.e., the frames-follow flag recited in column 11, line 10 of Miller which indicates that multiple frames together comprise a super frame) is not "information that the serial signals are converted to the parallel signals" as recited in Claim 60.

Moreover, the Examiner fails to mention the claimed "information for the topology of the parallel signals". Such information and the technical idea of notifying this information are neither disclosed nor suggested by Miller.

With this feature, for example, parallel signals originated from a series of serial signals can be transmitted as a group. In this case, when parallel signals are transmitted through transmitting paths that have different transmitting distances, a time difference occurs when the parallel signals arrive at a destination. However, even in such a case, it is possible to reduce the time difference by transmitting the parallel signals through the transmitting paths having similar transmitting distances (page 37, second paragraph of the specification). Such an advantageous effect cannot be obtained from Miller. Therefore, it is respectfully submitted that these claims define over the relied upon references.

Since Claim 62 includes the limitation recited in Claim 58 and the limitation recited in Claim 60, the above-described arguments based on Claims 58 and 60 can apply to Claim 62.

Claims 58, 59, 64, 65, 66/59, 69/59 and 76/58 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the '692 reference in view of Miyabe (Patent No.: US 7,024,113) and Oguchi. This rejection is respectfully traversed. Claims 64 and 65 have been cancelled, thereby rendering this rejection moot. Accordingly, applicants respectfully request the Examiner to reconsider and withdraw these rejections.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office

Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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